

## **Historic, Archive Document**

Do not assume content reflects current scientific knowledge, policies, or practices.





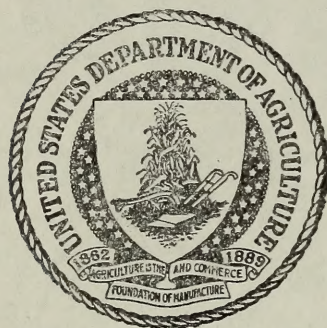
RESERVE

A241.01

So3



UNITED STATES  
DEPARTMENT OF AGRICULTURE  
LIBRARY



RESERVE  
BOOK NUMBER A241.01  
956535 S03



Library

3 REFERENCES ON SUBJECTS:

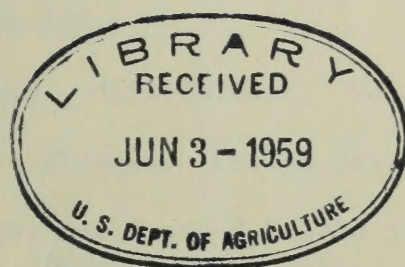
Wood Chips,

Sawdust,

Shavings,

Bark,

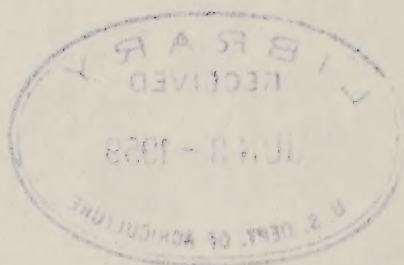
Wood Chippers //



Compiled by

Arthur C. McIntyre,  
2 U.S. Soil Conservation Service  
5a Upper Darby, Pennsylvania. //

July 16, <sup>5c</sup> 1956 //





- Albrecht, William A. 1938. Loss of Soil Organic Matter and Its Restoration. USDA. 1938 Yearbook, pp. 347-360.
- Allen, D.L., Rosene, W., and Warbach, O. 1951. Progress Report, Mimeo. Wildlife Investigations on Agricultural Land. Inland Fish and Wildlife Service. (Mulch experiments using sawdust and straw.) pp. 21 and 22.
- Allison, F. E., and Anderson, M.S. 1951. The Uses of Sawdust for Mulches and Soil Improvement. USDA. Bureau of Plant Industry, Soils, and Agricultural Engineering, Division of Soil Mgt. and Irrigation, Beltsville, MD. Mimeographed report, 19 pp. Also USDA Circular No. 891, Nov. 1951. 19 pp.
- Anderson, I. V. 1951. Lignin for Golf Greens and Other Horticultural Use. Northern Rocky Mountain Forest and Range Experiment Sta. Technical Note #87. Jan. 1951.
- Anon. 1931. Plant Response to Sawdust. Pro. Indiana Academy of Science. Vol. 41, pp. 125 and 126.
- Anon. 1942. Rambling Observations. Horticulture. Vol. 20, No. 2, p. 30.
- Anon. 1948. Sawdust as a Mulch. Flashes. Potash Newsletter, Northeast, No. 62.
- Anon. 1949. Forest Waste Products May Prove Valuable in Rebuilding Our Soils. Crops and Soils. Rutgers University. Dec. 1949.
- Anon. 1942. Sawdust Mulch Raises Yield (of Black Mission Figs). Soil Conservation, Vol. 17, No. 6, pp. 135 and 136.
- Aries, Robert S. 1948. The Use of Lignin as a Soil Builder. Northeastern Wood Utilization Council, Bulletin No. 19.
- Article. 1948. Tree Bark Makes Good Floor Litter. Farm News. Ohio Agricultural Experiment Sta., Vol. 33, No. 38, p. 1. Nov. 11, 1948.
- Attee, O. J. 1949. Shavings for Bedding Save Plant Food. Hoard's Dairyman, Vol. 94, No. 1, p. 18.
- Baker, Clarence E. 1947. Sawdust as an Orchard Mulch. Hoosier Hort. 29: 67-69.
- Banta, Eldon S. 1950. The Brush Chipper Saves Labor. American Fruit Grower. Dec. 1950.
- Bear, Firman E. 1946. The Real Values of Soil Organic Matter. Journal of Soil and Water Conservation, Vol. 1, No. 2.
- Booklet. 1949. If Your Soil Could Talk to You. New Idea Farm Equipment Co. Coldwater, Ohio. (Manure from livestock, compost, values of manure, etc.).
- Borcham, G. W. 1946. Is Digging Necessary? (Compost, sawdust, and no digging). Soil and Health, Vol. 1, pp. 211 and 212.
- Bratton, Allen W. 1941. The Production of Hogg'd Wood From Connecticut Hardwoods. Northeastern Forest Experiment Sta. Technical Note No. 41.

SECRET

1. The purpose of this document is to provide information regarding the activities of the [redacted] in the [redacted] area.

2. The [redacted] has been observed in the [redacted] area, and it is believed that it is engaged in [redacted] activities.

3. The [redacted] has been observed in the [redacted] area, and it is believed that it is engaged in [redacted] activities.

4. The [redacted] has been observed in the [redacted] area, and it is believed that it is engaged in [redacted] activities.

5. The [redacted] has been observed in the [redacted] area, and it is believed that it is engaged in [redacted] activities.

6. The [redacted] has been observed in the [redacted] area, and it is believed that it is engaged in [redacted] activities.

7. The [redacted] has been observed in the [redacted] area, and it is believed that it is engaged in [redacted] activities.

8. The [redacted] has been observed in the [redacted] area, and it is believed that it is engaged in [redacted] activities.

9. The [redacted] has been observed in the [redacted] area, and it is believed that it is engaged in [redacted] activities.

10. The [redacted] has been observed in the [redacted] area, and it is believed that it is engaged in [redacted] activities.

11. The [redacted] has been observed in the [redacted] area, and it is believed that it is engaged in [redacted] activities.

12. The [redacted] has been observed in the [redacted] area, and it is believed that it is engaged in [redacted] activities.

13. The [redacted] has been observed in the [redacted] area, and it is believed that it is engaged in [redacted] activities.



- Britt, C. S. 1940. (Sawdust and tobacco.) Letter to S.B. Detwiler, SCS, May 29, 1940.
- Britt, C. S. 1947. Letter to A.C. McIntyre reporting on favorable effects from uses of sawdust as mulch. Cites 6 cases. SCS, Region I. Oct. 10, 1947.
- Brundage, Roy C. 1953. Wood Chips - A Good Material for Livestock Bedding. Purdue Univ. Agric. Exp. Sta., Circular 395. June 1953.
- Butterfield, H. M. 1944. The Effect of Sawdust on Plant Growth. Journal of California Horticultural Society. Vol. 1, pp. 31 and 32. Jan. 1944.
- Calderwood, H. N., and May, W. D. 1947. Scrub Oak as a Potential Replacement for Chestnut. (Cost on gathering wood and chipping.) The Fla. Engr. and Industrial Exp. Sta., Univ. of Fla. Technical Paper No. 15. 18 pp.
- Carolus, R. L. 1945. Use Sawdust for Mulch and Humus. Virginia Truck Exp. Sta. Extension News. Va. Poly. Inst. and Agric. Exp. Sta. Spril 1945, p. 5.
- Chadwick, L. C. 1950. Soils - Sod, Green Manure, Winter Cover, and Companion Crops and Fertilizers for Nursery Stock Production in Ohio. Dept. of Hort. The Ohio State Univ. Nursery Notes. Vol. 19, Nos. 5 and 6.
- Chandler, F. B., and Mason, J. C. 1942. Effect of Mulch on Soil Moisture, Soil Temperature, and Growth of Blueberry Plants. Proc. Amer. Soc. Hort. Sci. Vol. 46, pp. 335-337.
- Chester, K. Starr. 1950. Report on Bakerbark as a Mulch. Reported at 1950 Nat. Farm Chemurgic Council conference. Also reported in advertising circular. Bakerbark Mulch Does a Better Job than Cultivation. The Baker Wood Preserving Co., Columbus, Ohio. Bulletin BB-M.
- Christopher, E. P., and Shutak, V. 1947. Influences of Several Soil Management Practices Upon the Yield of Cultivated Blueberries. Proc. Amer. Soc. Hort. Sci. Vol. 49, pp. 211 and 212.
- Collins, Rory. 1947. Lazy Man's Orchard. Country Gentlemen. Jan. 1947.
- Collison, R. C., and Conn, H. J. 1925. The Effect of Straw on Plant Growth. New York (Geneva) Agric. Exp. Sta. Tech. Bulletin No. 114.
- Collison, R. C. 1944. Sawdust Makes an Excellent Mulch. Farm Res. (N.Y.S. Sta.) 10:10.
- Conrad, J. P. 1927. Some Causes of the Injurious Effects of Sorghums and Suggested Remedies. Journal Amer. Soc. Agron. 19: 1091-1111.
- Cossitt, Floyd M. 1951. Can Wood Waste Be Used in Farming? Southern Lumberman. Dec. 15, 1951 issue.
- Davidson, Ross W.; Campbell, W. A.; and Blaisdell, Dorothy J. 1938. Differentiation of Wood-Decaying Fungi by Their Reactions on Gallic or Tannic Acid Medium. Journal Agric. Res. 57: 683-695.

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..

... ..



- Dawson, Roy C. 1950. The Use of Woody Materials on Agriculture Land. A review. USDA, SCS pub., SCS-TT-99. 14 mimeographed pages.
- Day, William C.; Pelzlar, M. J., Jr.; and Gottlieb, Sidney. 1949. The Biological Degradation of Lignin. I. Util. of Lignin by Fungi. Arch. Biochem. 23:360-369.
- Department of the Air Force. 1949. Grounds Construction and Maintenance. (Use of wood chips on parade grounds.) A.F.M. 90-1, p. 48.
- Dunn, Stuart; Seiberlich, Jr.; and Eppelsheimer, D. S. 1943. The Use of Lignin in Potato Fertilizer. Northeastern Wood Util. Council. Bulletin 7:21-26.
- Dunn, Stuart, and Seiberlich, Joseph. 1947. Mech. Engr. March, p. 212.
- Dunn, Stuart; Wolfe, L. P., Jr.; MacDonald, W. A.; and Baker, J. R. 1952. Field Plot Studies with Sawdust for Soil Improvement. Plant and Soil. Vol. IV, No. 2. June 1952.
- Dunn, Stuart; Wolfe, L. P., Jr.; MacDonald, W. A.; and Baker, J. R. 1952. Field Plot Studies with Sawdust for Soil Improvement. Plant and Soil. Vol. 4, pp. 164-170.
- Eagerton, Mrs. H. C. 1943. (Mulch-Sawdust). Country Gentlemen, Jan. 1943.
- Eaton, E. L. 1951. Propagating Highbush Blueberries by Mounding. (Using sawdust.) Scientific Agriculture, Vol. 31, No. 3. Mar.
- Eastern Dealer. 1952. Profit and Progress in Wood Chips. The Eastern Dealer. Vol. 46, No. 9, pp. 8 and 9. Sept. 1952.
- Eggert, Russell. 1950. Root Studies on McIntosh Apple Trees Growing in Sod and Mulched with Hay and Sawdust. Journal New Hampshire Hort. Soc. Vol. 13, pp. 26 and 27.
- Eggert, Russell. 1951. Sawdust Incorporated With Soils: Its Effect on Crop Yields the Second Year. Journal New Hampshire Hort. Soc. Vol. 14.
- Ellenwood, C. W. 1944. Sawdust for Mulch. Country Gentlemen. Mar. p. 28. Also The Ohio Farmer. 1945. Vol. 209, No. 9, p. 28.
- Farber, Edward. 1952. Vegetable Aliment from Wood. Wood Research, No. 8. Sept. 1952. Also Journal of Forestry.
- Farm News. 1948. Tree Bark Makes Good Floor Litter. Ohio Agric. Exp. Sta. Vol. 33, No. 38, p. 1. Nov. 11, 1948.
- Fenton, R. H., and McKusick, H. A. 1950. A Pilot Study of a Portable Wood Chipper. The Northeastern Forest Exp. Sta., Upper Darby, Pa. Station Paper No. 37.
- Foustal, Levin. 1939. The Nature and Use of Organic Amendments. USDA Tech. Bulletin, Separate No. 1633, p. 466.
- Findlay, W. P. K. 1944. Some Factors Influencing the Rate of Decay in Wood. Soc. Agr. Bact. Proc. 15:67-68 (Abst.).





- Fitzgerald, O. A. 1952. Cash from Slash. American Forests. Aug. 1952 issue, pp. 16, 17, and 30.
- Fobes, E. W. 1949. Status of Portable Wood Chippers. Paper - Forest Prods. Res. Soc. Reprint 1949. (Meeting, May 1949.)
- Fobes, Eugene W. 1953. Wood-Residue Collection Techniques. Mimeo. paper read at Northeastern Section meeting, Forest Products Research Society, Portland, Maine, May 8, 1953.
- Forest Log. 1948. Oregon. Experiments, Older Sawdust, Favorable. Other studies have been carried out. April 1948 issue.
- Forest Products Laboratory. 1946. Chemical Analysis of Wood. U. S. Forest Service. Tech. Note No. 235. Also Chart No. 2M 37181F.
- Forest Products Laboratory. U. S. Forest Service, Madison, Wis. Letter dated Aug. 24, 1951 (to C. B. Walker) signed by R. L. Mitchell. Gives N.K.P. and CA % for these hardwood species and two pines.
- Forestry Digest. 1951. Sawdust on Soils Aids in Root Rot Control. Aug. issue, p. 6.
- Foss, E. W. 1951. Wood Chipping: A Progress Report. New York State College of Agriculture, Dept. Agric. Engr. Mimeo, Bull. A5, 5 pp.
- Geesaman, D. W., and Norris, T. G. 1943. Dairy Farming With Sawdust. American Forest, 49:164-165.
- Gibbs, William M., and Werkman, C. H. 1922. Effect of Tree Products on Bacteriological Activities in Soils. Soil Sci., Vol. 13, No. , pp. 303-322. (Abstr. in Exp. Sta. Record, Vol. 47, No. 9, pp. 812-813. Feb. 10, 1923.
- Gibbs, William M., and Batchelor, H. W. 1927. Effect of Tree Products on Bacteriological Activities in Soils. II, Study of Forest Soils. Soil Sci., Vol. 24, pp. 351-363.
- Gilman, William. 1951. It Pays to Stockpile Sawdust. New England Homestead, Vol. 124, No. 22, p. 5.
- Gottlieb, Sidney, and Geller, J. H. 1949. Enzymatic Decomposition of Lignin. Science 110 (2851):189-190.
- Gourley, J. H. 1946. Sawdust Makes Good Fruit Tree Mulch. American Fruit Grower, p. 27. Oct. 1946 issue.
- Griggs, W. H., and Rollins, H. A. Effect of Planting Treatment and Soil Management System on the Production of Cultivated Blueberries. Proc. Amer. Soc. Hort. Sci. 46:211-212. 1947.
- Haines, William H. B. 1953. Waste-Logs, Slabs, and Edgings. Research Notes. Southeastern Forest Experiment Sta., No. 5, May 1953.
- Hallet, Richard. 1949. Sawdust Makes a Farm Pay. Portland, Maine, Sunday Telegram Magazine. 11-27-49.





- Harris, Elwin E. 1950. Lignin for Better Crops. USDA Yearbook 1950-51, pp. 883-885.
- Harris, G. Howell. 1951. Sawdust as a Mulch for Strawberries. Scientific Agriculture, Vol. 31, pp. 52-60. Univ. of British Columbia, Vancouver, B. C. Dept. of Hort. July 1950.
- Hartwell, D. L.; Damon, S. C.; and Grandall, F. E. 1923. The Comparative Crop Effect of Fertilizer Chemicals, Cow Manure With Straw Bedding, or With Planner-Shavings, Bedding, and of the Latter Supplemented With Phosphorus or Potassium. Rhode Island State College, Agric. Exp. Sta. Bulletin 196.
- Hawkins, A. D. 1948. Just Went Out on His Own. (Farming with Sawdust - Chadbourne). New England Homestead. July 10, 1948.
- Henderson, B. W., Jr. 1951. Wood Chips for Bedding. Rhode Island Agr. Exp. Sta., Research Vol. 2, No. 2, pp. 18 and 19.
- Herbst, F. P. 1950. Sawdust for Seed Beds. American Nurseryman. Vol. 42, No. 1, p. 48. July 1, 1950.
- Heuser, Emil; Shema, B. F.; Shockley, William; Applying, J. W.; and McCoy, J. F. 1949. The Effect of Lignin-Destroying Fungi Upon the Carbohydrate Fraction of Wood. Arch. Biochem. 21:343-350.
- Hubbard, Ernest. (Trans. from German by H. B. Stocke). 1920. The Utilization of Wood Waste. London. pp. 204-207. Third English Edition.
- Hughes, H. 1949. Sawdust as a Compost Ingredient. Quarterly Journal of Forestry. R. F. S. of E. and W. Vol. 43, No. 2.
- Isenberg, F. M., and Odland, M. L. 1950. Comparative Effect of Various Organic (Sawdust) Mulches and Clean Cultivation on Yields of Certain Vegetable Crops. Pennsylvania Agr. Exp. Sta., Progress Report No. 35, 10 pp. Aug. 1950.
- Jenkins, Hal. 1951. Wood Chips on the Land. Better Farming. Spring Issue, pp. 11 and 13.
- Johnson, W. A. 1944. The Effect of Sawdust on the Production of Tomatoes and Fall Potatoes and on Certain Soil Factors Affecting Plant Growth. Amer. Soc. Hort. Sci. Proc. 44:407-412.
- Kellenberber, F. S. 1946. Save Pencil Sharpenings. Horticulture. p. 144, Mar. 1, 1946, issue.
- Kernan, Henry S. 1950. Lost Sawdust. The Land. Vol. 8, No. 4, p. 502.
- King, F. C. Sawdust for the Land a Neglected Source of Humus. Farmer and Stock-Breeder. 62:1047. May 4, 1948.
- Zoch, A. 1912. Über die Kinnwirkung des Laub- und Nadelwaldes auf den Boden und die ihn bewohnenden Pflanzen. Centbl. Bakt., Abt. 2, 41:545-572.





- Koroleff, A. 1949. Portable Chippers for Slash and Other Wood Waste. Pulp and Paper Res. Inst. of Canada. Woodlands Research Index No. 64 (B-11), July 1949. Woodlands Research Index No. 71, 1949. Re: Portable Slash and Wood Chippers. No. 72, 1949; same title as No. 71. No. 79, 1950. Portable Chippers (some additional data).
- Kramer, Amihud; Evinger, W. L.; and Schrader, A. L. Effect of Mulches and Fertilizers on Yield and Survival of Dryland and Highland Blueberries. Proc. Amer. Soc. Hort. Sci. 38:455-461. 1941.
- Latimer, L. P., and Percival, G. P. 1944. Sawdust, Seaweed, and Meadow Hay as Mulch for McIntosh Apple Trees. Proc. Amer. Soc. Hort. Sci. Vol. 44, pp. 49-52.
- Latimer, L. P., and Percival, G. P. 1947. Comparative Value of Sawdust, Hay, and Seaweed as Mulch for Apple Trees. Amer. Soc. Hort. Sci. Proc. 50:23-30.
- Levandowsky, D. W. 1940. Sawdust as an Organic Amendment. Unpublished Manuscript, 3 pp., SCS. Nov. 30, 1940.
- Lunt, H. A. 1945. The Value of Wood Ashes as Fertilizer. Northeastern Wood Utilization Council Bulletin No. 7:14-20.
- Lunt, H. A. 1951. Wood Chips as a Soil Amendment. Conn. Agric. Exp. Sta. Progress Report (in press). Wood as a Soil Builder. Frontiers of Plant Science, Vol. 4, No. 1. 1951.
- Lunt, H. A. 1954. With Added Nitrogen Woodchips Improve Soil. Crops and Soils, Vol. 6, No. 4, p. 16.
- MacAndrews, A. H. 1945. Sawdust Culture for Delphinium Seeds. Amer. Delphinium Soc. 1945. pp. 15-17. 1946, Sawdust Culture for Primrose Seeds. Quarterly of American Primrose Soc., Vol. 3, No. 4, p. 58. April, 1946.
- MacDonald, William A., and Dunn, Stuart. 1953. Sawdust Composts in Soil Improvement. II. Pot Culture Studies with Compost Mixtures of Sawdust and Manure, Steam-Treated Composts, and Miscellaneous Mixtures. Plant and Soil. Vol. IV, No. 3, pp. 235-247. Jan. 1953.
- Mails, C. 1948. A Clean-Smelling Barn. Country Gentlemen.
- Maki, T. E., and Henry, Buch W. Root-Rot Control and Soil Improvement at the Ashe Forest Nursery. Southern Forest Experiment Sta. Occasional Paper No. 119.
- Martin, J. P., and Waksman, S. A. 1943. Synthetic Manure. N. J. Agric. Exp. Sta., Rutgers Univ. Circular 470.
- Martinez, A. W. 1952. The City with Golden Garbage. Collier's. May 31, 1952. pp. 41-46.
- May, Jack T. 1953. More Sawdust - Better Seedlings. Alabama Lumberman. Feb. 1953 issue.





- McCool, M. M. 1940. Studies on pH Values of Sawdust and Soil-Sawdust Mixtures. Boyce Thompson Institute. Vol. 15, No. 5, pp. 279-282.
- McIntyre, A. C. 1948. Wood and Soil Husbandry. Forest Leaves. Vol. 38, No. 4, pp. 12-13.
- McIntyre, A. C. 1948. Proposed Research - Wood as a Soil Supplement - Sawdust and Woodchips. Report to R. L. Albright relative to studies at Rhode Island Agric. Exp. Sta.
- McIntyre, A. C. 1948. Why Waste Wood? Soil Conservation. Vol. 14, No. 4, pp. 75-78.
- McIntyre, A. C. 1948. Can Wood Contribute to Soil Improvement? Paper presented before Highway Board, Washington, D. C., Dec. 7, 1948. Published in Highway Magazine, Vol. No. P.
- McIntyre, A. C. 1949. Humus from Wood. The Land. Vol. 8, No. 2, pp. 211-214.
- McIntyre, A. C. 1949. Wood Waste as a Soil Conditioner. Paper, Virginia-Carolinas Soc. Meeting of Forest Products Res. Soc. Published reports, Util. of Wood Waste. Nov. 1949, p. C-1.
- McIntyre, A. C. 1949. Mulching With Woodchips. Amer. Fruit Grower. Vol. 69, No. 6, p. 14.
- McIntyre, A. C. 1950. Woodchips for Overgrazed Recreation Areas. Journal of Forestry. Vol. 48, pp. 724-725.
- McIntyre, A. C. 1950. Woodchips Fill the Bill for Both Soil and Water on Conservation Farms. Better Farms. Dec. 1950. pp. 6 and 12.
- McIntyre, A. C. 1950. Woodchips for Conservation Farming. Manuscript prepared for USDA, Soil Conservation Service leaflet.
- McIntyre, A. C. 1950. Increased Uses for Wood on the Farm. Journal of Forestry, Vol. 48, pp. 397-400.
- McIntyre, A. C. and Mirantz, M. 1950. Bedding from Your Woodlot. Farm Journal. Nov. issue. Page 35.
- McIntyre, A. C. 1951. Woodchips, Water, and Soil. Journal of Soil and Water Conservation. Vol. 6, No. 1, pp. 20-25.
- McIntyre, A. C., and Roth, B. A. 1951. When the Woodchips are Down. New Jersey Farm and Garden. Vol. 22, No. 10, pp. 16-71, 72, and 73.
- McIntyre, A. C. 1951. Woodchips, Woodchippers, and Conservation Farming. For. Prod. Res. Soc., Deep South Section. Mimeographed talk.
- McIntyre, A. C. 1952. Woodchips for the Land. USDA, SCS, Leaflet No. 323, 8 pp.
- McIntyre, A. C. 1953. Woodchippers and Woodchips. Paper presented at meeting of Northeastern Section, Forest Products Research Society, in Portland, Maine, May 7, 1953.
- McIntyre, A. C. 1954. Woodchips Succeed in Park and Nursery (mulch). Parks and Recreation Magazine. Vol. 37, No. 5, p. 25. 1954.





- McKusick, H. A. 1950. Portable Woodchippers. Connecticut Woodlands. Vol. XV, No. 3, p. 44.
- Midgley, A. R. 1945. The Use of Sawdust, Shavings, and Super-phosphate With Dairy Manure. Bulletin No. 7. Northeastern Wood Util. Council. Conference at Orono, Maine, on wood products for fertilizers. Also Bulletin 32, pp. 15-23. 1950.
- Mitchell, R. L. 1951. N.K.P.Ca - % in Sawdust From Five Tree Species. SCS, ~~Forest Service~~, ~~Forest File, Aug. 24, 1951, from U.S. Forest Service, Forest File R-PL, Info, Inq.~~
- Morgan, J. T. 1949. The Production of Woodchips for Coarse Fiber in the Central States Region. Central States For. Exp. Sta. Tech. Paper No. 111.
- Motto, Marcel N. 1931. The Use of Sawdust as a Fertilizer. Journal Agric. Pratique (French). Vol. 55, p. 192.
- Mulch-Baker Park Mulch Does a Better Job than Cultivation. Bulletin BP-M Leaflet. 12 pp., published by The Baker Wood Preserving Company, Columbus, Ohio.
- Mulch-Sawdust Mulch Raises Yield. 1952. Soil Conservation. Vol. 17, No. 6, pp. 135 and 136.
- Mulches - pH Values of, 1950. Progress Report on Studies at Univ. of New Hampshire Horticultural Farm, Durham, N.H. Mimeo. (Covers studies, 1941 to 1949, using sod, hay, sawdust, and seaweed.)
- Natural Resources Council of Canada. 1945. Use of Sawdust for Making a Ligneous Fertilizer Abstracts on uses of sawdust. Mimeo. Bulletin #1285.
- New Hampshire Agricultural Experiment Station. 1951. Research Report - Treatment of Plots in Sawdust Experiment (also yields). Mimeo. report. N.H. Hort. Farm - 27655.
- New Jersey Extension Service. Sawdust, Woodchips, and Shavings. Unnumbered leaflet. Issued June 1950. 9 pp.
- New York Agricultural Experiment Station, Geneva, N.Y. Sawdust and Mulch - Favorable Use. Circular No. 189.
- Newton, G. A., and Danilooff, K.B. 1927. The Influence of Manures and Organic Residues on Plant Growth. Soil Science. Vol. 24, pp. 95-101.
- Nikolaevskaya, M. A., and Chastukhin, V. Ya. 1945. (Micro-flora of Spruce Wood in Various Stages of Decay.) Pedology 8:403-412.
- Nissley, C. H. 1944. (Mulching - sawdust and peat moss). Country Gentleman. Oct., p. 38.
- Norman, A. G. 1947. Organic Matter in Soils. USDA Yearbook, Separate No. 1945, pp. 499-510.
- Northeast Pulpwood Research Center. 1951. Report on Portable Chippers. (Gorham, N.H.). Data on the utilization of sawmill reject material and initial trials of the Carthage Portable Chipper.





- Northeast Pulpwood Research Center, Gorham, N.H. 1951. 13-page report on portable chippers. Jan. 26, 1951.
- Northeastern Wood Utilization Council. 1951. Chipped Wood Production and Uses. Bulletin No. 33. (P.O. Box 1577, New Haven 6, Conn.). Report of conference on subject - papers and discussion. 1949. The Chemistry and Utilization of Bark. Bulletin No. 25. 1949. Wood Waste Utilization. Bulletin No. 30. 1951. Wood Fuel. Bulletin No. 35. 1951. Check-up Meeting on Chipped Wood. (Report of conference on chippers and chips.). 1951. Bulletin No. 16, 3 pp.
- Northeastern Wood Utilization Council, Inc. The Use of Wood Chips in Agriculture. Papers on conference, Syracuse, N.Y., Oct. 9, 1953. Bulletin No. 41. Aug. 1954.
- Northeastern Wood Utilization Council. 1951. Wood Notes No. 16. Aug. 1951, 4 pp. Check-up Meeting on Chipped Wood. Also other releases.
- Northern Rocky Mountain Forest and Range Experiment Station. 1951. Sawdust Should Go Back to the Soil. USDA, Forest Service. Research Hi-Lites. Vol. 3, No. 1, 2 pp.
- Odland, F. E., and Knoblaugh, H. C. 1935. A Comparative Test of Different Bedding Materials and Chemical Supplements With Cow Manure Applied in a Three-Year Rotation. Bulletin No. 251. Rhode Island Agric. Exp. Sta.
- Olsen, R. M. 1940. Absorptive Capacity of Different Materials Ordinarily Used for Bedding. Journal of Dairy Science. Vol. 23, No. 4, pp. 355-360. Also in S. Dakota State College Agric. Exp. Sta. Rec. 83, pp. 535-536. Oct. 1940.
- Pathfinder. 1951. Waste-Whittler (newsnote). Oct. 31 issue, p. 33.
- Pennsylvania State College. Aug. 1950. Comparative Effects of Various Organic Mulches and Clean Cultivation on Yields of Certain Vegetable Crops. Progress Report No. 35.
- Perlmutter, F., and Darrow, G. M. 1942. Effect of Soil Media, Photo-period, and Nitrogenous Fertilizer on Growth of Blueberry Seedlings. Proc. Soc. Hort. Sci. Vol. 40, pp. 341-346.
- Pinck, L. A.; Allison, F. E.; and Gaddy, V. L. 1946. The Nitrogen Requirement in the Utilization of Carbonaceous Residues in Soil. Journal American Society of Agronomy. Vol. 38, pp. 410-420.
- Pulver, William. 1951. Woodchips as Bedding. Pennsylvania Forests. Vol. 36, pp 18-19.
- Reck, Samuel H. 1951. Woodchips Might Help Us Gain 1,500,000 Farm Acres. New Jersey Farm and Garden. Oct. 1951, p. 17.
- Reilly, Henry F. 1950. Blueberries for Profit. Providence, R. I., Sunday Journal. Sec. 5, Aug. 6.
- Report of Conference at Orono, Maine. 1945. Wood Products for Fertilizer. 1945 papers and discussions presented. Representatives from 6 states on panel. Northeastern Wood Utilization Council, P.O. Box 1577, New Haven 6, Conn. Bulletin No. 7, 71 pp.





- Report - 1947. Uses for Sawdust and Shavings. U.S. Forest Service, Forest Products Lab. Mimeo. report No. R1666-1. Also report No. R1666 entitled General Recommendations Regarding Methods for Wood Waste Utilization.
- Report - 1950. Wood Chipping Studies at Charles Lothrop Pack Demons. Forest. Forestry Club Quarterly. Univ. of Wash. Vol. 23, No. 2, pp. 18-20.
- Report of Conference at Philadelphia. 1951. Wood Fuel. Sec. B, 36 pp. on chipped wood. Three papers and discussion. Northeastern Wood Utilization Council, New Haven 6, Conn. June. 76 pp.
- Rhode Island Agricultural Experiment Station. Sixtieth Annual Report. 1948. Contribution 722, p. 18.
- Richardson, Ron. 1951. There's Good Value in Woodchips. The Rural New Yorker. Sept. 15, 1951, issue, p. 550.
- Rishell, C. A. 1951. Test Tube Potentials. Journal of Forestry. Vol. 49, No. 10, p. 724. (Wood and the soil).
- Roberts, A. M., and Stephenson, R. E. 1948. Sawdust and Other Wood Wastes as Mulches for Horticultural Crops. Proc. Oreg. St. Hort. Soc. 63:29-34.
- Roth, B. A., and McIntyre, A. C. There's Gold in Them Chips. Land Improvement. Vol. 1, No. 2, p. 13. Nov. 1954.
- Roth, Bernhard A. Hammered Wood. Pennsylvania Farmer. May 12, 1956. (Manufacture and use as litter of wood fragments from a Glo-Hog Hammermill.)
- Salomon, Milton. 1951. Decomposition of Wood Chips in Soil. R. I. Agric. Exp. Sta. (Also in press.)
- Salter, Robert M., and Schollenberger, C.J. 1938. Farm Manure. (Litter as a constituent of manure - tables of N.K.P. value.). USDA Yearbook 1938, Soils and Men, p. 451.
- Savage, E.F., and Darrow, G.M. 1942. Growth Response of Blueberries Under Clean Cultivation and Various Kinds of Mulch Materials. Amer. Soc. Hort. Sci. Proc. 44, pp. 338-340.
- Scarseth, G.D. 1948. Organic Matter and Our Food Supply. Better Crops and Plant Food. Vol. 32, No. 4, p. 21.
- Scharrer, D. K. 1948. Nature and Problems of Fertilizing in Modern Times. Amer. Fertilizer Magazine. May.
- Scheffer, Theodore C., and Hopp, Henry. 1949. Decay Resistance of Black Locust Heartwood. USDA Tech. Bulletin 984.
- Schon, R.C. 1951. Progress report - Utilization of Organic Wastes. Ditford, Feb. 9, 1951. and May 9, 1951. Airlie Farm. St. Augustin Co. 2 Mts., P.Q., Canada.
- Schorger, A. W. 1926. The Chemistry of Cellulose and Wood. McGraw-Hill Book Co., N.Y.





- Schrack, R. A. 1949. The Story of the Wood Chip. Paper presented before Southern New England Chapter of Soil Cons. Soc. of America.
- Schrack, R. A., and Albright, R. L. 1949. Chips on the Land. Amer. Forests. Vol. 55, No. 5, pp. 16 and 17.
- Schrack, Robert. 1951. Report on Operation of Wood Chipper in Rhode Island. Summary Report to Soil Conservation Service, Upper Darby, Penn.
- Schreiner, Oswald. 1923. Toxic Organic Soil Constituents and the Influence of Oxidation. Journal Amer. Soc. Agron. 15:270-277.
- Schreiner, O., and Reed, H.S. 1907. Some factors Influencing Soil Fertility. USDA bulletin (soils) 40:36-40.  
1906. The Role of Oxidation in Soil Fertility. USDA bulletin (soils), No. 56.
- Schreiner, O., and Shorey, R.C. 1907. The Isolation of Harmful Organic Substances from Soils. USDA, Soils Bulletin No. 53.
- Schreiner, O., and Skinner, J. J. 1911. Organic Compounds and Fertilizer Action. USDA Bulletin (soils), No. 77.
- Seeger, K.C. 1946. Broiler House Litters. Timely Notes No. 3. Extension Service. Univ. of Del. (other reports on same subject reviewed.)
- Seiberlich, J., and Dunn, S. 1947. Uses of Lignin in Agriculture. Mech. Engr. Vol. 69, pp. 197 and 198.
- Shutak, Vladimir; Christopher, E.P.; and McElroy, Leona. 1949. The Effect of Soil Management on the Yield of Cultivated Blueberries. R.I. Agric. Exp. Sta., Paper No. 773.
- Shutak, V. G., and Christopher, E. P. 1952. Sawdust Mulch for Blueberries. R. I. Agric. Exp. Sta., Bulletin 312, 18 pp. Jan. 1952.
- Slate, George L. 1942. Letter - Approves of Sawdust Mulch. Horticulture, Mar. 1, 1942.  
1941. Results of Sawdust Mulch in Nut Nurseries. Amer. Fruit Grower. Vol. Sept.  
1950. Sawdust Mulch for Daffodils. Flower Grower, p. 34. Nov.
- Slater, C. S. 1948-49-50-51. Memorandum. Reports on effect of soil treatments, including sawdust. SCS, Research, Washington, D. C.  
1951. Big Flats Story. Manuscript, Oct. 16, 1951, for publication in What's New in Crops and Soils.
- Slater, C. S. 1952. Big Flats Story. (Report on use of sawdust and chips as soil amendments.) Paper prepared for publication. SCS, Agr. Res. Center, Beltsville, MD.
- Soderbaum, H. G., and Bartel, C. 1924. Influence of Sawdust on Crop Growth in Soils. (Trans. Exp. Sta. Rec. 53:121.)





- Soil Conservation Service, Research, USDA. 1946. The Effect of Fertilizers and Organic Matter on Soil Structure and Productivity. Mimeo. report released with reports on studies of H. Hopp and H. L. Hopkins on Earthworms in Relation to Agriculture.
- Soil Conservation Service, USDA. Letter from H. Hopp on Favorable Effects of Sawdust Treatments at Big Flats Nursery, SCS, Region I. Letter dated Sept. 12, 1948. Also letter from Slater to Nichols on same subject dated May 24, 1950.
- Soil Conservation Service, Research Div., Washington, D.C. 1940. Report of Study of Composting and Mulching from letters and monthly narrative reports by D. W. Levandowsky. Reva E. Rosenbach. Hillculture Div., May 10, 1940. (Includes letters from G. S. Perry commenting on use of sawdust in nurseries. 12 pp.
- Soil Conservation Service, USDA, Region I. 1948. Letter on favorable use of sawdust in Oregon pear orchard.
- Solomon, Milton. 1952. The Accumulation of Soil Organic Matter from Wood Chips. B.I. Agric. Exp. Sta., Paper No. 813. Abstract of thesis.
- Southam, C.M., and Whirligh, J. 1943. Effects of Extract of Western Red-cedar Heartwood on Certain Wood-decaying Fungi in Culture. Phytopathology 33:517-524.
- Southwick, L. 1944. Mulching-Sawdust. Country Gentleman. No. 1944, p. 28.
- Sowden, F. J., and Atkinson, H. J. 1948. Waste Sulphite Liquor Solids as a Soil Treatment. Sci. Agr. 28:175-182. April 7, Sci. 2.
- Speh, Carl F. 1950. The Contribution of Crop-Use Research. Journal Soil and Water Conservation 5(1):7-10, 41.
- Stephens, Rupert. 1951. Sawdust Is My Slave. Article in B. C. Farmer (spring 1951), reprinted in booklet, 11 pp., available from Goldstream Berry Paradise, R. R. 1, Langford, V. I., B. C., Canada.
- Stephenson, R. E. 1949. Sawdust for Soil Improvement. The Oregon Nurseryman and Florist. Vol. 4, No. 5.
- Stone, E. L., Jr. 1949. No More Sawdust Piles. New York Conservationist. Vol. 3, No. 5, pp. 4-6.
- Strait, H. G. The New York Conservationist. 1950. Bedding from Wood Chips. Vol. 4, No. 6, p. 35.
- Swanson, Robert E. 1953. Wood-Waste Mulches in Hawaii. Soil Conservation. Vol. 18, No. 11, pp. 243-245
- Taylor, Frank J. 1947. Lazy Man's Orchard. Country Gentleman. Jan. 1947 issue, p. 23.
- Taylor, Henry C. 1951. Building Three Acres (sawdust for compost). The Land. Vol. 10, No. 3, pp. 301-304.





- Technical Note. 1953. Volume in Tops and Limbs of Sawlog Trees. U.S. Forest Service, Lake States Forest Exp. Sta., Tech. Note No. 390. Jan. 1953.  
Also Tech. Note. No. 315. April 1949.
- Thom, Charles. 1945. Action of Soil Bacteria on Wood Products. Northeastern Wood Util. Council, Bulletin No. 7:38-48.
- Timber Engineering Company. 1951. Process to Produce a Soil Conditioner from Sawdust. Report. (1319 - 18th St., N.W., Washington, D.C.).
- Turk, L.M. 1943. The Effect of Sawdust on Plant Growth. Mich. Agric. Exp. Sta., Quart. Bulletin 26(1):10-22.  
1944. The Effect of Sawdust on Plant Growth. Flower Grower. 32:355.  
1945. Sawdust as a Soil Amendment and a Mulch. Amer. Rose. Ann., pp. 63-65.  
1950. Letter to A. C. McIntyre answering questions pertaining to use of wood as a soil supplement. May 15, 1950. (1% N. required.)
- Turk, L.M., and Partridge, N.L. 1947. Effect of Various Mulching Materials on Orchard Soils. Soil Sci. 64:111-125.
- U. S. Department of Agriculture. Yearbook. 1938. Fertilizing Ingredients, Table, p. 451. (Shows sawdust - N.K.P. 4-2-4.)
- U. S. Department of Agriculture, Forest Service. 1947. Wood Waste in the United States. Report 4 from reappraisal of forest situation.
- U. S. Department of Agriculture, Press Service. 1951. Washington, D. C. Pine Shavings Found Useful to Sugar Beet Breeders and Seed Growers. Also USDA Press Service Report, Sept. 24, 1951. Shavings Used as a Packaging Material to Carry Roots.
- University of California. 1950. Composting for Disposal of Organic Refuse, and Bibliography. Tech. Bulletins 1 & 2, Inst. of Engineering Research.
- Vierheller, A. F. 1950. Sawdust May be Used as a Mulch. Univ. of Md., College of Agric., News Release, Nov. 22, 1950. (Gives N and fertilizer requirements when one inch of sawdust is added to soil.)
- Viljoen, J. A., and Fred, W.B. 1924. The Effect of Different Kinds of Wood and of Wood Pulp Cellulose on Plant Growth. Soil Science. 17-3:199-211. Abstract in Exp. Sta. Record, Vol. 51, No. 5, pp. 415 and 416. Oct. 1924.
- Wakeman, Selman A. 1938. Humus: Origin, Chemical Composition, and Importance in Nature. 2nd Ed.
- Walls, James S. 1950. Pointers on Propagation. American Nurseryman. Vol. XCII, No. 3. Oct. 15. (This Question of Sawdust), p. 12.
- Walter, Richard. 1953. Wood Chips for Mulching and Humus. The Shade Tree. Vol. 26, No. 11-12. Nov.-Dec. 1953.
- Weaver, J. G., and Willis, L.G. 1936. The Use of Sawdust Impregnated With Copper Sulphate as an Ameliorant of Soils for Floral Crops. N.C. Agric. Exp. Sta., 59th Annual Report, pp. 100 and 101.
- Wells, James S. 1927. The Influence of Manures and Organic Residues on Plant Growth. Soil Science. Vol. 24, No. 2.







- Wells, James S. 1927. A Resume of the Problem of Nitrogen Losses Through Denitrification. Soil Science. Vol. 24, No. 4, pp. 285-290.
- Wells, James S. 1943. Composting Sawdust. The Gardener's Chronicle. Vol. 43, p. 228. June 5.
- Wells, James S. 1950. Use of Sawdust for Ericaceous Crops. American Nurseryman. Vol. 41, No. 10. pp. 7 and 8. May 15.
- White, H. C. 1889. Ash Analysis of Native Woods. Ga. Agric. Exp. Sta. Bulletin No. 2, 17-26; 3, 50-53.
- White, J.W. 1945-1950. Comparison of Sawdust and Wheat Straw for Bedding. Wood products for Fertilizer. Northeastern Wood Util. Council. Bulletin No. 32, pp. 27-32.
- Williams, Ross. 1951. Wood as a Soil Builder. Proc. of the 6th Annual Meeting of Northwest Wood Products Clinic, Spokane, Wash., April 10-11, 1951. Topic 14. (Bound volume of subject matter distributed at meeting.)
- Williams, T. C. 1953. A Report on the Fitchburg Wood Chipper. Loaned to Sussex County, N.J., Soil Conservation District. Mimeo. report. April 3, 1953. Soil Conservation Service, Newton, N.J.
- Winter, J.D. 1944. Sawdust as a Mulch. Minn. Fruit Grower. Vol. 2, pp. 16 and 17.
- Winters, R. K. 1949. The Importance of Economic Consideration in Wood Waste Utilization Research. Journal of Forestry 47:39-44.
- Wolfe, Leonard P. 1950. The Use of Sawdust in Fresh and Composted Form in Studies on Soil-Plant Relationships. Unpublished thesis, Univ. of N. H.
- Wolfe, Leonard P., and Dunn, Stuart. 1953. Sawdust Composts in Soil Improvement. I. Studies on Aeration, Acid Hydrolysis, Manure, and Waste Materials as Composting Aids. Plants and Soil. Vol. IV, No. 3, pp. 223-235. Jan. 53
- Wollerton, William. 1953. My Experiences Doing Custom Chipping. Paper presented before Syracuse Wood Chip Conference. (Address: Rhinebeck, Dutchess County, N. Y.)
- Wormold, H., and King, F. C. 1948. Waste-wood Mulches are Safer when Weathered. Grower 29:848-849.
- Zak, John, and Eisenmenger, W. S. 1939. Rates of Decomposition of Various Bedding Materials. Annual Report. Mass. Agric. Exp. Sta. Bulletin No. 355, p. 12.
- Zarger, T. G. 1943. Beneficial Influences of Mulches on Two-Year Growth of Planted Black Walnut Varieties. Proc. Amer. Soc. Hort. Sci. Vol. 43, pp. 5 and 6.



1957. A number of 1957-1958 season's data were collected.

1958. A number of 1958-1959 season's data were collected.

1959. A number of 1959-1960 season's data were collected.

1960. A number of 1960-1961 season's data were collected.

1961. A number of 1961-1962 season's data were collected.

1962. A number of 1962-1963 season's data were collected.

1963. A number of 1963-1964 season's data were collected.

1964. A number of 1964-1965 season's data were collected.

1965. A number of 1965-1966 season's data were collected.

1966. A number of 1966-1967 season's data were collected.

1967. A number of 1967-1968 season's data were collected.

1968. A number of 1968-1969 season's data were collected.

1969. A number of 1969-1970 season's data were collected.

1970. A number of 1970-1971 season's data were collected.

1971. A number of 1971-1972 season's data were collected.

1972. A number of 1972-1973 season's data were collected.

1973. A number of 1973-1974 season's data were collected.